©

"Leading the Lean Enterprise Conversion"

NLVC

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Profitable Lean Conversions Through Involvement

Simpler℠

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World Class Benchmarking

	"Batch" System	"Toyota" System (Lean)	
Productivity	**1x**	**4x**	**Margin improvement "2"pts./yr. For 6 yrs**
Inventory Turnover	**3x**	**30x**	**Cash Generation**
Customer Lead Time	**30-90 days**	**1 day**	**Turns company into**
Customer Complaint Rate	**10,000ppm**	**100ppm**	**A "Growth" company**
Space		**-90%**	

MOST DON'T REALIZE HOW HIGH "HIGH" REALLY IS

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U.S. CONVERSION EXAMPLE

Heavy Truck Engine Brake Manufacturer

- **General**
  - **New England based**
  - **UAW shop**
  - **Conversion started late 1987**
  - **Beginning status**
    - **Batch production**
    - **Inventory turns in the “high 2’s”**

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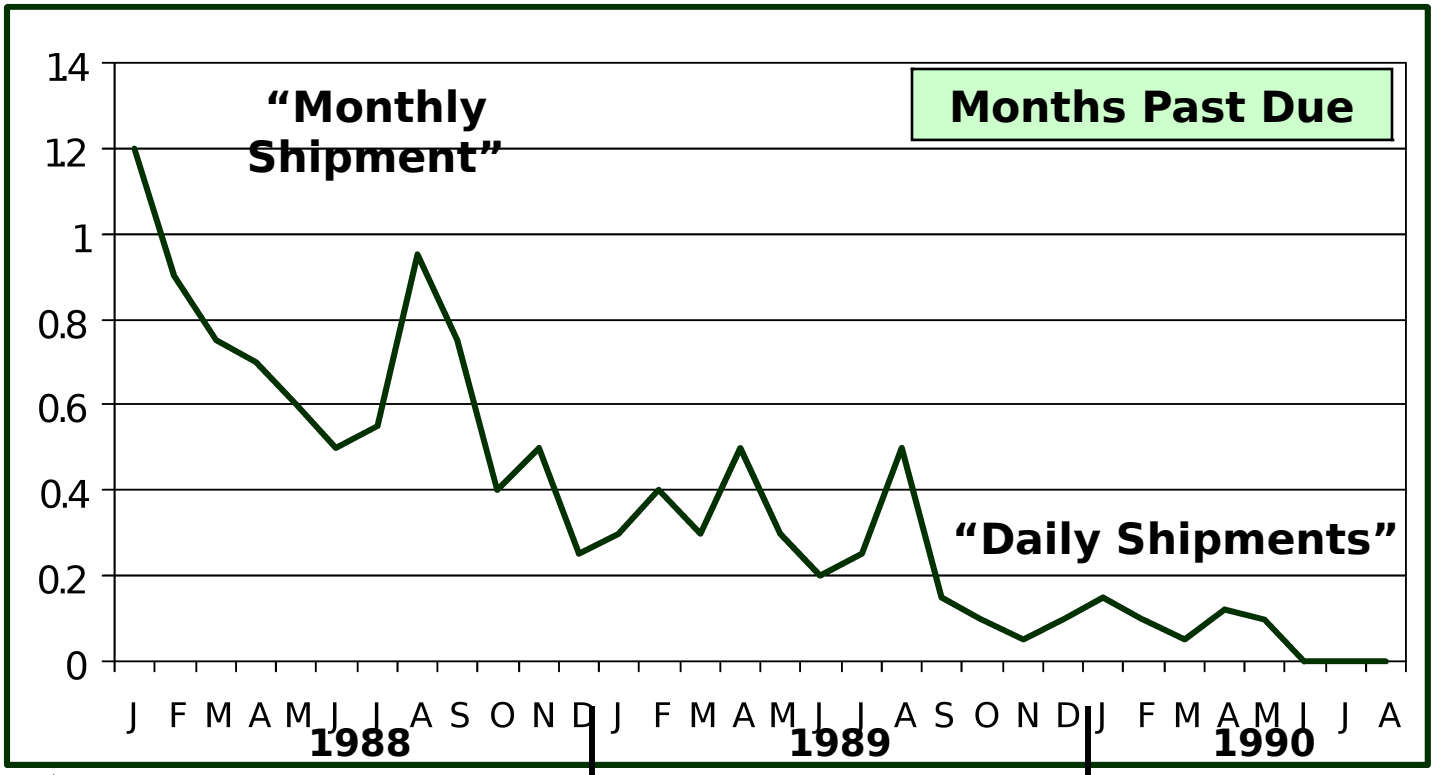
Lean Conversion Impact

Delivery Performance



- ❖Moved from delivery once a month to daily in 2 ½ yrs
- ❖Moved from 0% on time to 100% on time

SMED → Smaller Lots → Flow

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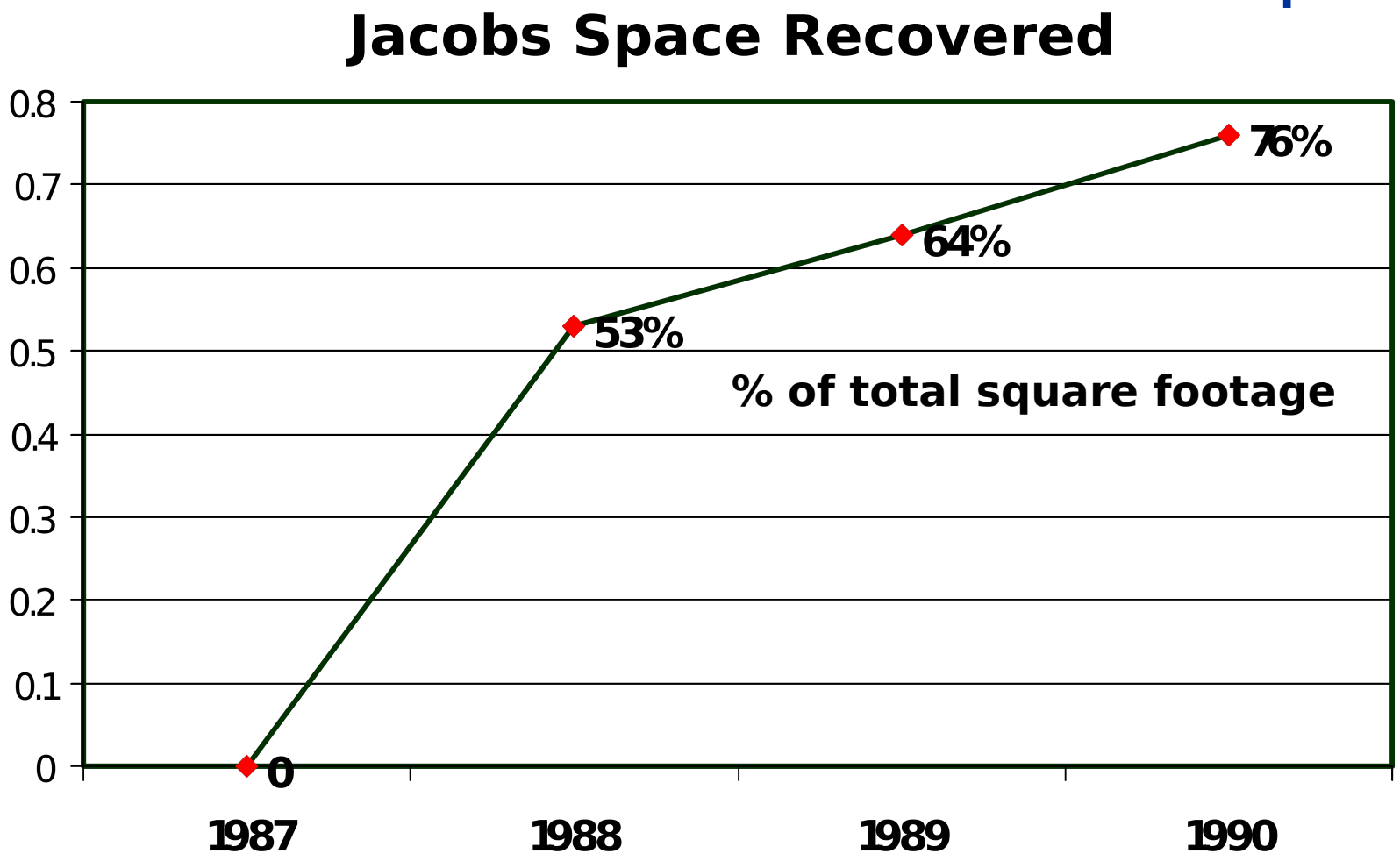
Lean Conversion Impact



½ of floor space freed up in 1 yr

¾ of floor space freed up in 3 yrs

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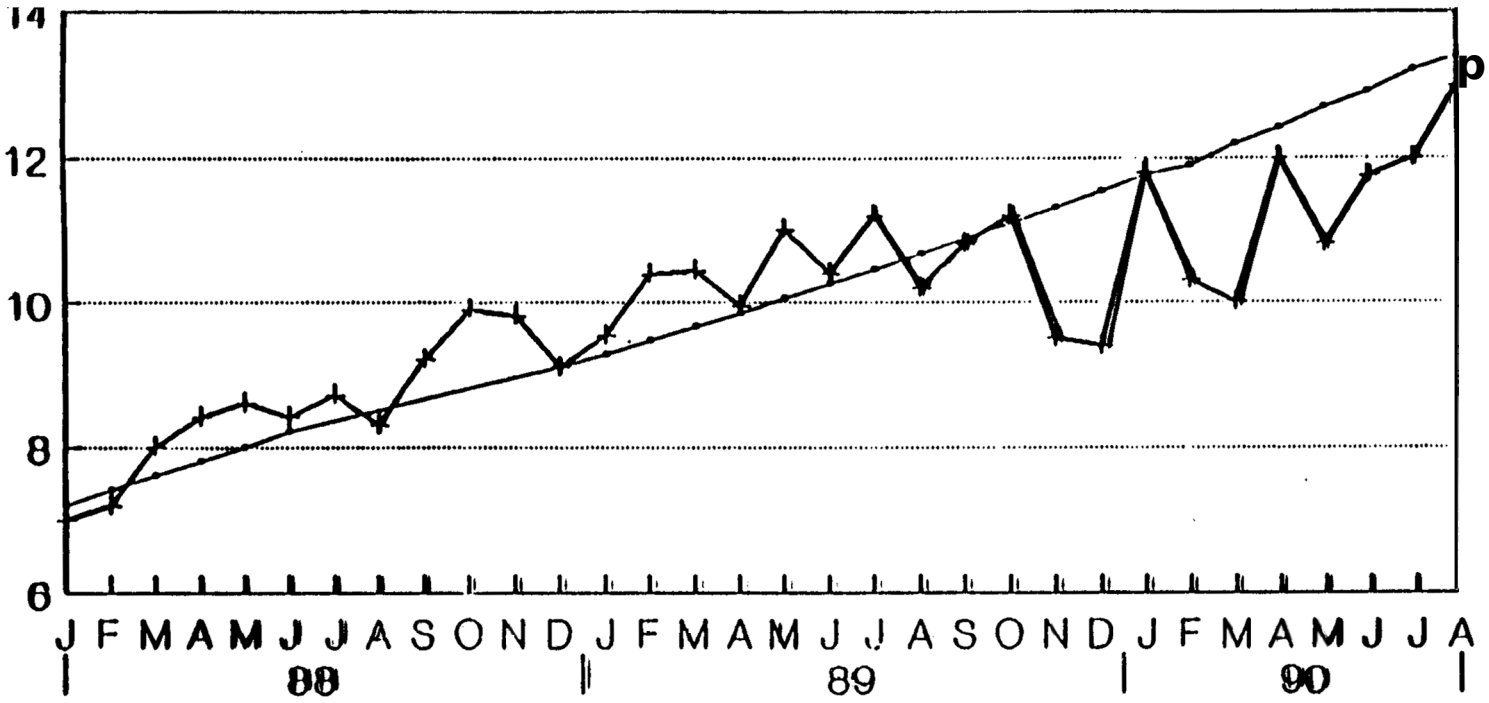
Lean Conversion Impact
Jacobs Productivity Trend

Kits Packed/100 hours



+86% productivity

GK to Pres. Tool Group

Few firms measure productivity –

Even fewer push double digit improvement rates

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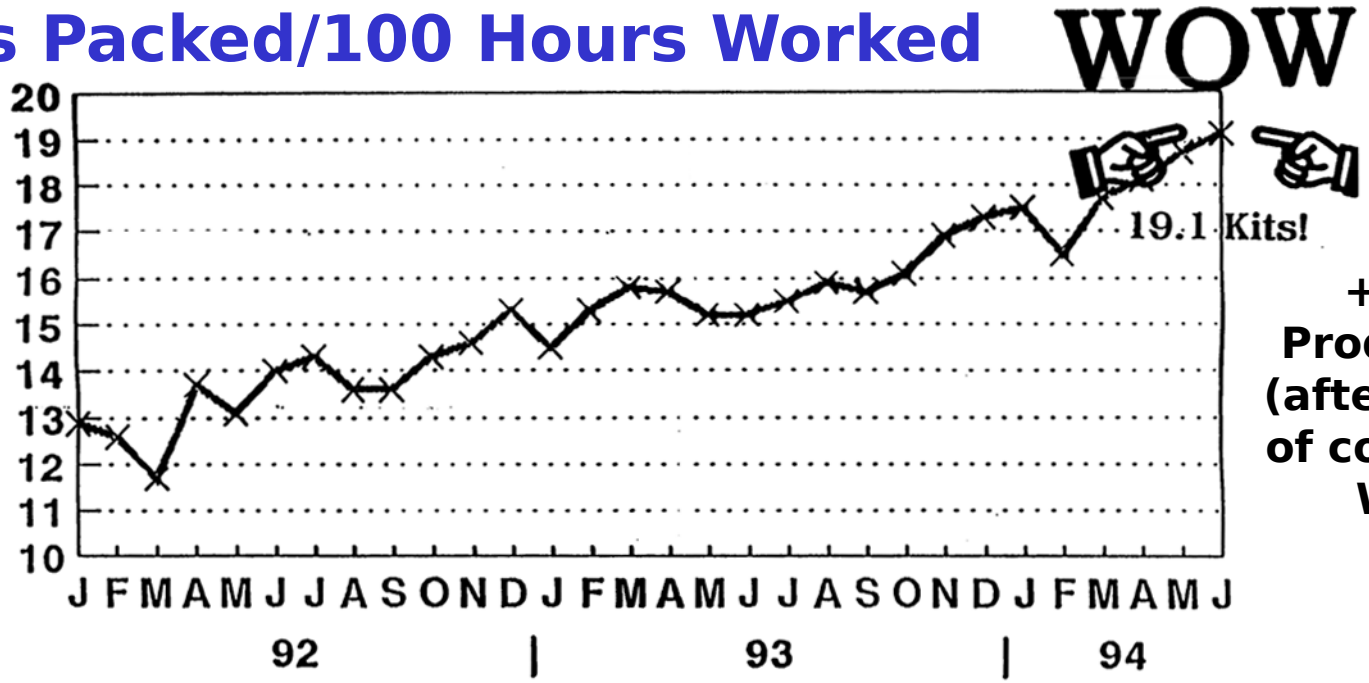
Lean Conversion Impact

JACOBS PRODUCTIVITY TREND

Kits Packed/100 Hours Worked



+271% Productivity (after 5 years of conversion Work)

Productivity growth is primary source of margin gains!

Note: Implementation stopped 9/90 Restarted 1/92

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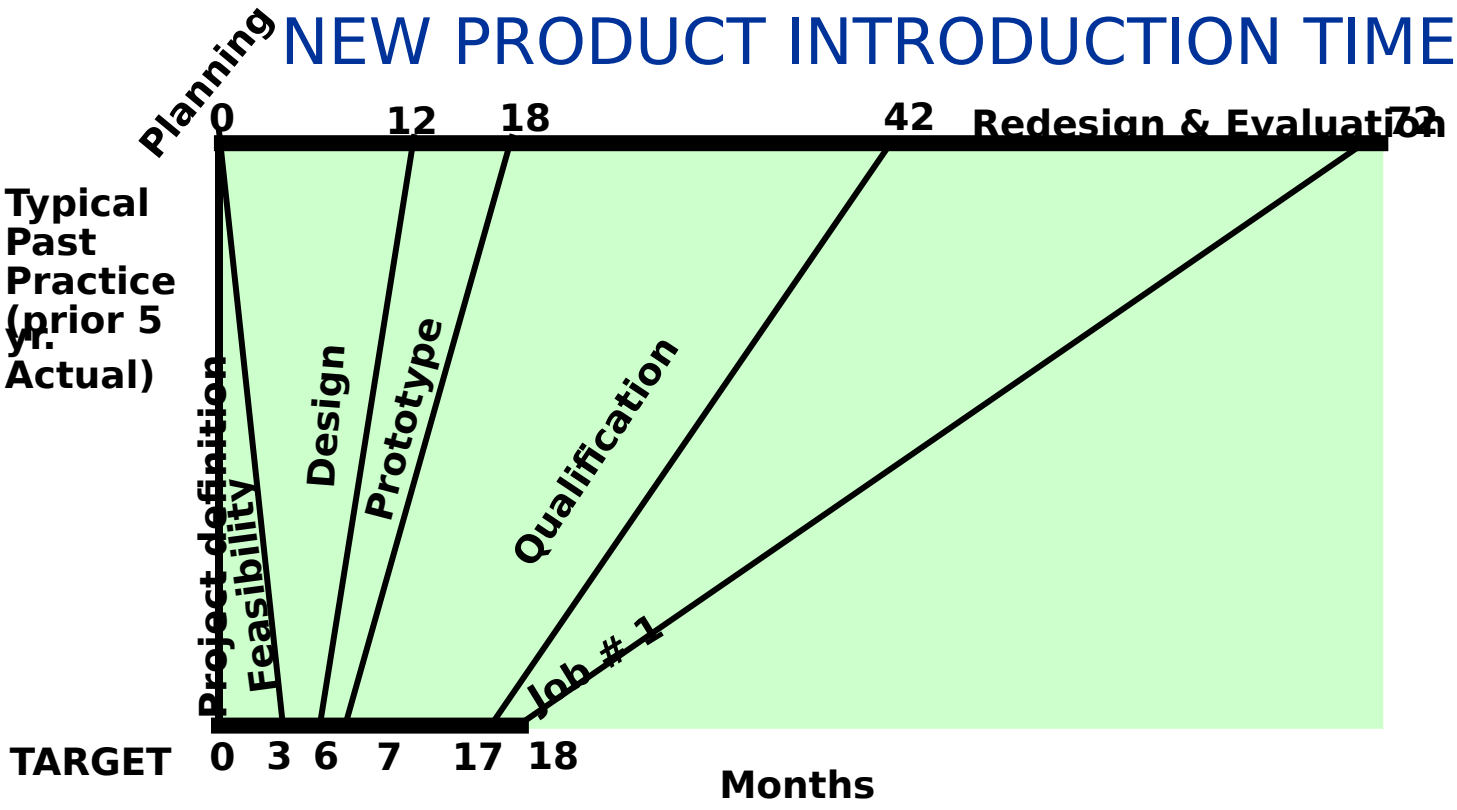
Lean Conversion Impact

NEW PRODUCT INTRODUCTION TIME



- ❖Goals
  - ❖400% Productivity Gain
  - ❖¾ Reduction in Time

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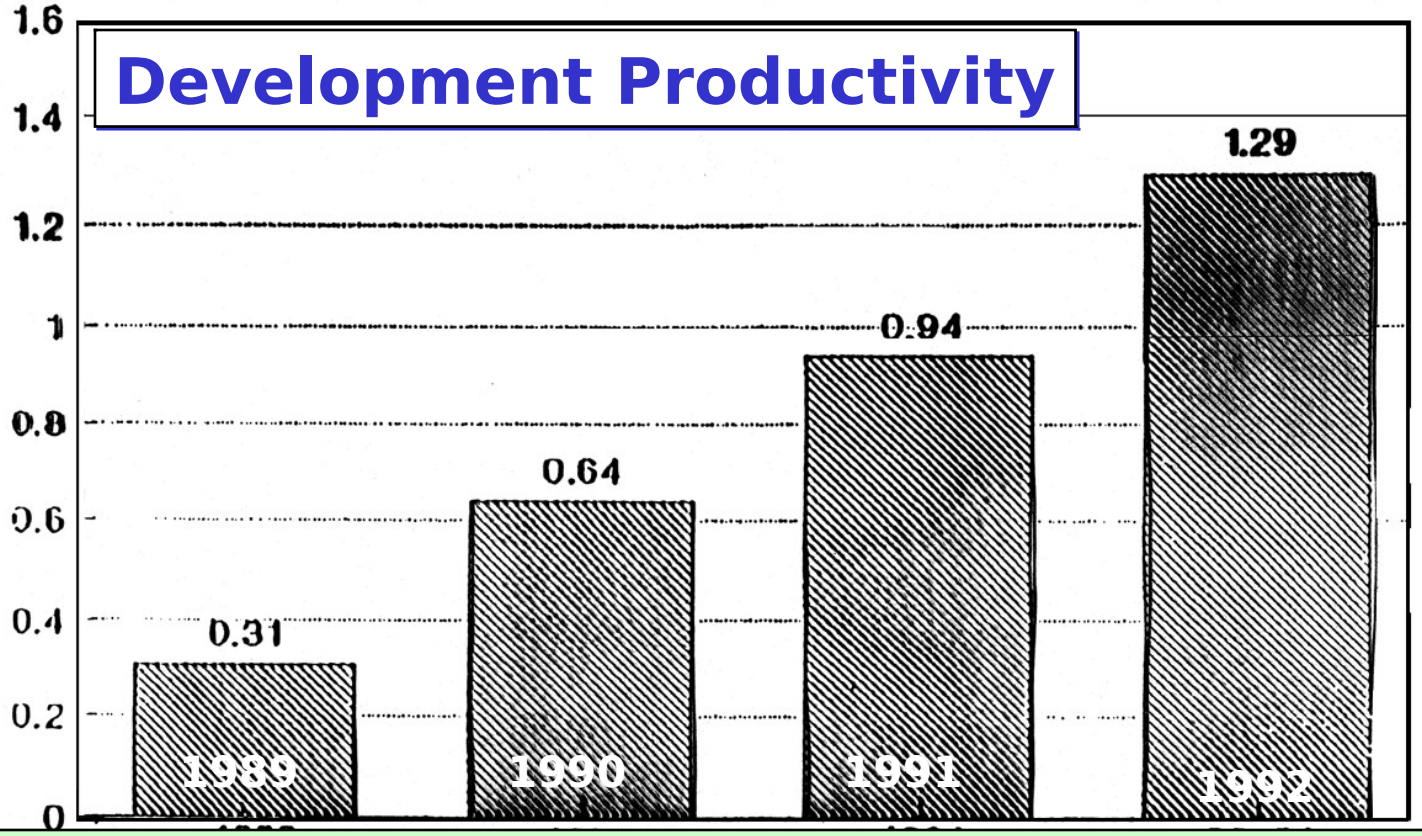
Lean Conversion Impact



Results:

- ❖400% Productivity Gains in 3 yrs
- ❖80% Reduction in Time
  - ❖2 new Mitsubishi engine brake families in 12 months

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Office Furniture Firm – 2 ½ Years of Lean

- Recordable accidents -59%
- Customer Quality Complaints -65%
- Lead Time 12 weeks → 2 weeks
  - Note: 5,000,000 SKU's build to order
- Complete and on time shipments 68% → 97%
- Enterprise productivity +35%
- Inventory turnover +89%
- Gross profit percent +77%

"It Just Doesn't Feel Right"

The Core Concepts of Lean are not Complex Ideas, but they are Difficult to apply because they are the OPPOSITE of what we currently believe:

- **Batch production**
  - **Versus…1 piece flow**
- **We need to "fire fight" today's problems quickly**
  - **Versus…we need to do a root cause solution to problems to work our way out of fire fighting**
- **I like having "some" inventory**
  - **Versus…inventory causes waste and also "hides waste" and prevents improvement in productivity, quality and flow**
- **Economic Order Quantity**
  - **Versus…"all set ups can be reduced by 97%**
- **Once we have improved an operation we are done**
  - **Versus…every time you apply the lean tools to an operation you will find more waste!**
- **We "PUSH" customer orders into the value stream**
  - **Versus…we pull customer orders through the value stream…as needed**

"The Toyota System is a revolution of consciousness." **Taiichi Ohno**

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It's Counterintuitive

- **You outsource to reduce costs**
  - **Versus…you in-source to take advantage of lower lean costs**
- **The law of diminishing returns**
  - **Versus…lean gains normally increase the more times you apply lean tools to the same value stream**
- **A supervisor's "natural urge" to redeploy the lowest performer from a work team whose area has been Kaizened**
  - **Versus…always redeploying the best team members**
- **In a capacity crunch the fast way to grow output is to add more machines, space and manpower**
  - **Versus…applying lean tools as a far faster way to grow capacity**

"The top management of business must reform their consciousness and make up their mind to REVERSE the flow of conventional production, transfer and delivery. This faces lots of resistance and it takes courage." Taiichi Ohno, "Evolution of the Toyota Production System" unpublished manuscript

Success Requires New Behaviors

- **3 shifts are necessary for capacity utilization**
  - **Versus…2 shifts with the time between each shift results in higher uptime, increased productivity and improved communications / problem solving**
- **We need a fast high capacity machine to handle all of our capacity plus growth**
  - **Versus…we need many small "right sized" machines that cannot cycle faster than takt time and fit into cellular layouts**
- **We need to operate in a team environment**
  - **Versus…successful lean leaders have to be both a dictator AND a coach**
- **Lean is for the shop floor**
  - **Versus…we need to apply the lean tools to all of our administrative processes where a significant portion of total compensation cost, lead**

The more "batch/mass" experience you have, the more "wrong" lean feels

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The Learning Curve

- **You can only really learn lean production by O.J.T. (the "dirty hands" method)**
- **If you spend a full week on a Kaizen event, improving a small area of your operation, it will take a dozen weeks of the O.J.T. to give "BASIC TRAINING" in lean production (at a Kaizen event/month pace, this takes one year)**
- **If you continue to gain personal experience in full-time , week-long "doses", it will take about 36 weeks of O.J.T. before you are COMPETENT with most of the lean "tools"**
- **However, it will take about 60 weeks of O.J.T. (about 5 years) for you to be fully competent with the "tools"**

EVERYONE underestimates the length of the learning curve!

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Lean Participation

Number of Events	0	1 - 2	3 - 5	6+
Supervision	-3	3	8	13
Employee Involvement	-4	3	14	16
Career Advancement	-1	0	7	13
Job Satisfaction	-2	0	11	14
Customer Focus	-3	2	12	14
Kaizen Initiative	-6	7	14	27

INVOLVEMENT → COMMITMENT!

“If you tell me; I will forget.

If you show me; I will remember.

If you involve me; I will DO!”

Confucius

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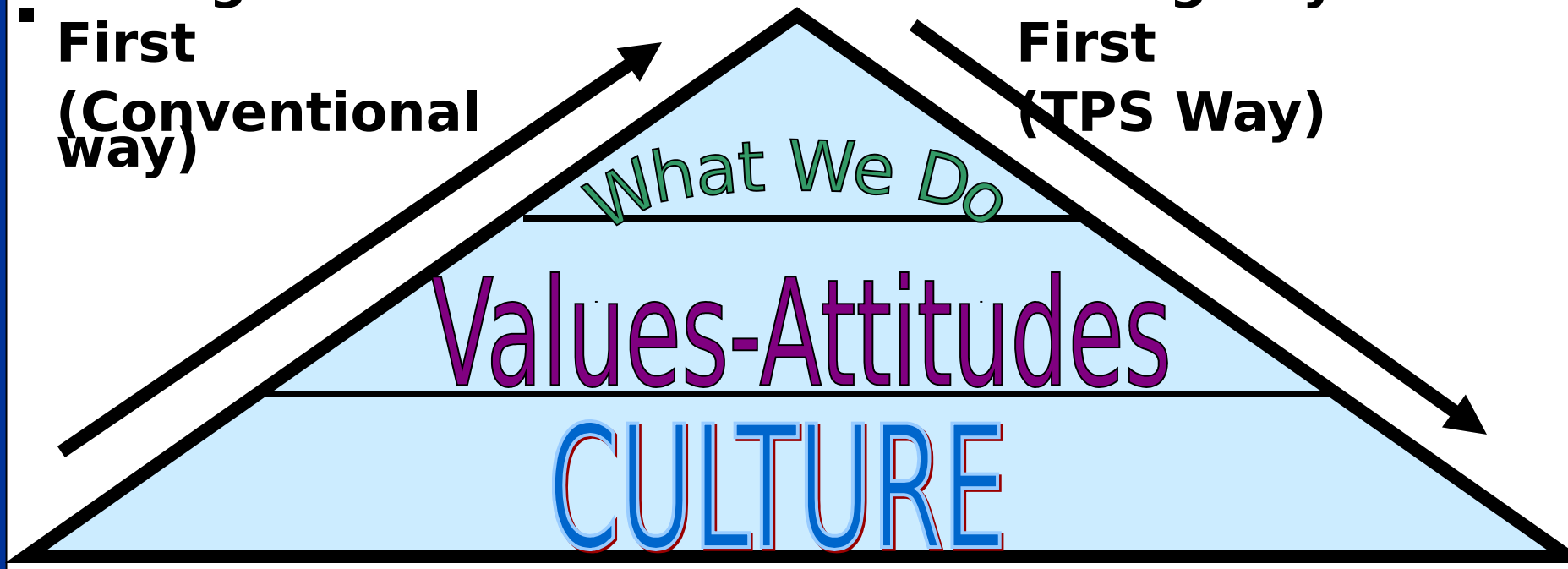
Organizing For Lean

- **Change Culture First (Conventional way)**

Change System First (TPS Way)



"Excellence is not a singular act. You are what you repeatedly do." Shequille O'Neal

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"It's easier to act yourself into a new way of thinking than to think yourself into a new way of acting."

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Organizing for Lean

Alignment-Short Term

- **Successful lean conversions have 2-3% of their employees dedicated, FULL TIME, to improvement efforts by their 3rd year**
  - **A good formula is to allow the addition of 1 full time Lean addition for every 5 employees "freed up" through Kaizen events/lean deployment**
- **This level of support should support 1-2, week long Kaizen events, each year, for every 10 employees**
  - **Site with 1000 people = 100/200 week long Kaizen**

Results are directly proportional to the Quantity of High Quality events

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The Pace of Change

- **People start to become "believers" as they gain competence with the basic tools through repeated successful applications (somewhere between 12 and 36 rapid improvement events).**
- **For the organization, a "culture shift" actually occurs when the number of "believers" reaches "critical mass" – that point at which the conversion begins to feed on itself.**
- **Critical Mass**
  - **100% of population has been on at least one team**
  - **50% of population has been on at least six teams**
  - **25% of population has been on 12 or more teams**
  - **5% of population has been on at least 60 teams**

TEAM PARTICIPATION DRIVES RESULTS & CULTURE CHANGE

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Organizing for Lean

Top Management Role

- **Successful lean conversions are ALWAYS led from the top**
- **Key tasks for executive leadership:**
  - **Select a "sensei" to guide each site manager**
  - **Encourage site management to build full time improvement teams**
  - **Participate full time in one 3 day value stream analysis, plus…**
  - **Spend 1 FULL WEEK, early on, as a member of a "standard work" team in one of the operations**

YOU CAN'T DELEGATE LEADERSHIP!

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Mgmt role cont'd

Organizing for Lean

- Arrange for a member of the executive leadership team to be on hand for each "Friday Morning Report-out" session at the sites during their Kaizen event weeks
  - This simultaneously shows corporate support AND educates the executive staff on the lean conversion process
  - If Kaizen events are held monthly at each site this executive leadership attendance should be every month for the first 6 months, and then quarterly for the next 2 years
- Hold a monthly review (preferably at a plant site) of improvement projects & results for all locations that have begun the lean conversion process (Policy Deployment)
- MOST IMPORTANT, the "anti-bodies" must be addressed...and this needs to be done in the first 3

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Putting the System to work

"The basic concepts of the Toyota Production System are unchanging. But companies implement those concepts differently."

To benefit from the Toyota Production System, companies must satisfy three basic conditions:

- **1. Top management must make a strong and visible commitment to the system, must participate directly in implementing the system, and must instruct middle level managers to do likewise.**
- **2. All employees must participate in the system.**
- **3. The companies must put in place a solid framework for cultivating capable leaders and for providing employees with necessary practical skills.**

Source: The Toyota Production System, TMC

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Putting the System to work (cont'd)

- **Once top executives recognize that corporate survival depends on fundamental change, they must lead that change themselves.**
  - **They must venture into the workplace**
  - **They must let employees know what kind of change they envision and why**
  - **They must put middle management on notice that managers' jobs will hinge on active cooperation in promoting change**

You can't manage a lean conversion –

YOU HAVE TO LEAD IT!

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"Example is not the main thing in influencing others.....it is the ONLY thing!"

Albert Schweitzer

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